
Description

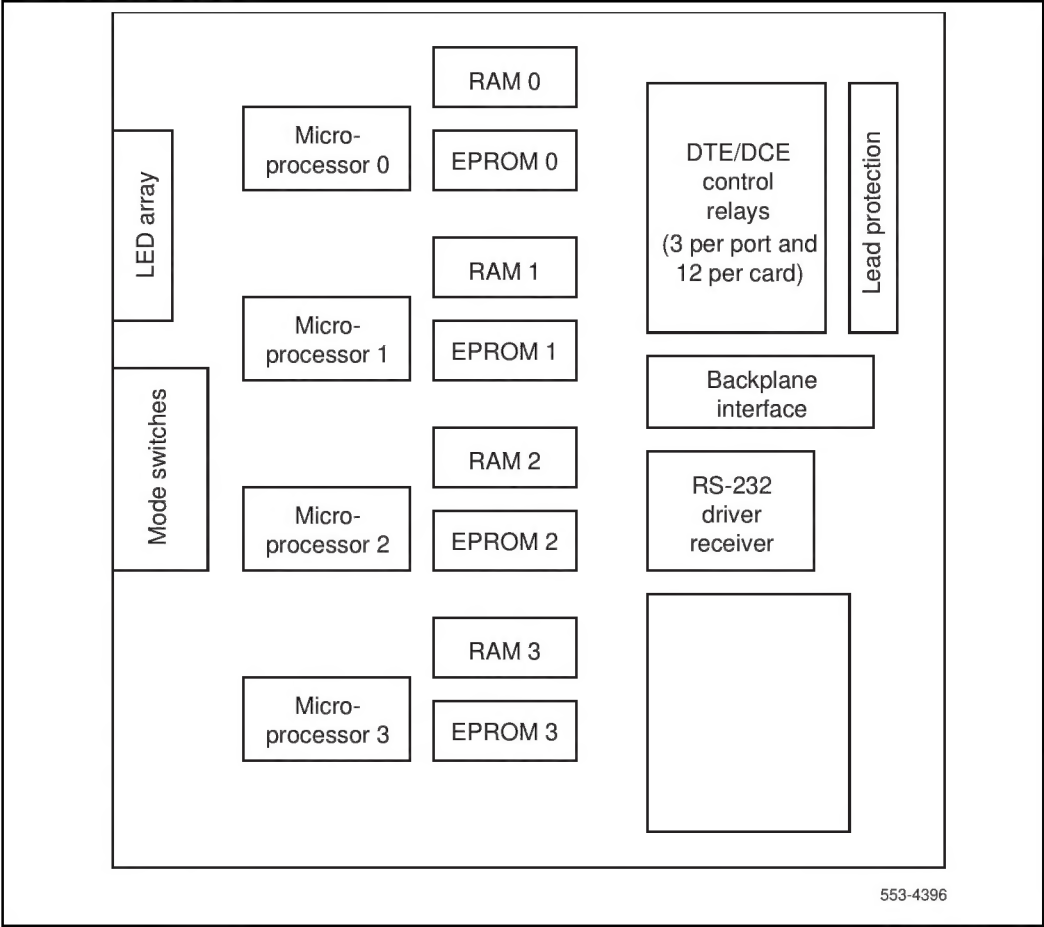
The RS-232 Interface Line Card (RILC) is contained on one four-layer printed circuit pack (PCP). The card is 12.5 in. x 10 in. (317.5 mm x 254 mm) and conforms to the Meridian 1 common features drawing for a peripheral card. It has a gray metal faceplate that contains LED indicators and DIP switch controls for each of the four ports.

Note: The RILC cannot be used in single density peripheral shelves or in the Intelligent Peripheral Equipment (IPE) modules. However, it can be used in the following PE modules and shelves: NT8D13, QSD64, QSD65, QSD80, QSP35, and QSP36.

The PCP is equipped with the following CMOS component parts (Figure 2):

- The microprocessor handles the asynchronous communication channel with the DTE or DCE, converts the data into the Meridian 1 data format, and interfaces with the Meridian 1 signaling channel for call establishment and tear down.
- The converters change the eight-bit parallel bus from the microprocessor to the bit interleaved format of the Meridian 1 network. The signaling interface does the level shifting and retiming of the signals from the peripheral shelf.
- EPROM and RAM are used for memory.
- The RS-232-C drivers and receivers are standard 1488 or 1489 chips (or equivalent). These EIA leads are protected against –48 V ringing and ±15 V with back-to-back zener diodes.
- Three Double-Pole-Double-Throw (DPDT) relays are used to route the RS-232 leads for configuring the port into the DTE or DCE mode. There are 3 relays for each port or 12 relays for the four ports on the RILC.

Figure 2
RILC block diagram



Controls and indicators

The RILC faceplate provides Light Emitting Diode (LED) indicators and DIP switches to monitor the status of the RS-232 interface signals, to control the interface mode and lead states, and to set the interface baud rate. **Figure 3** shows the RILC faceplate and configuration switches and indicator LEDs.

The RILC has nine LEDs that function as follows:

- Six LEDs are for monitoring the status of the RS-232 leads. The LEDs are shared among the four ports and are controlled by a push-button (SEL) switch.
- Two LEDs indicate which port is selected for monitoring.
- A single LED indicates ON when the RILC card is disabled.

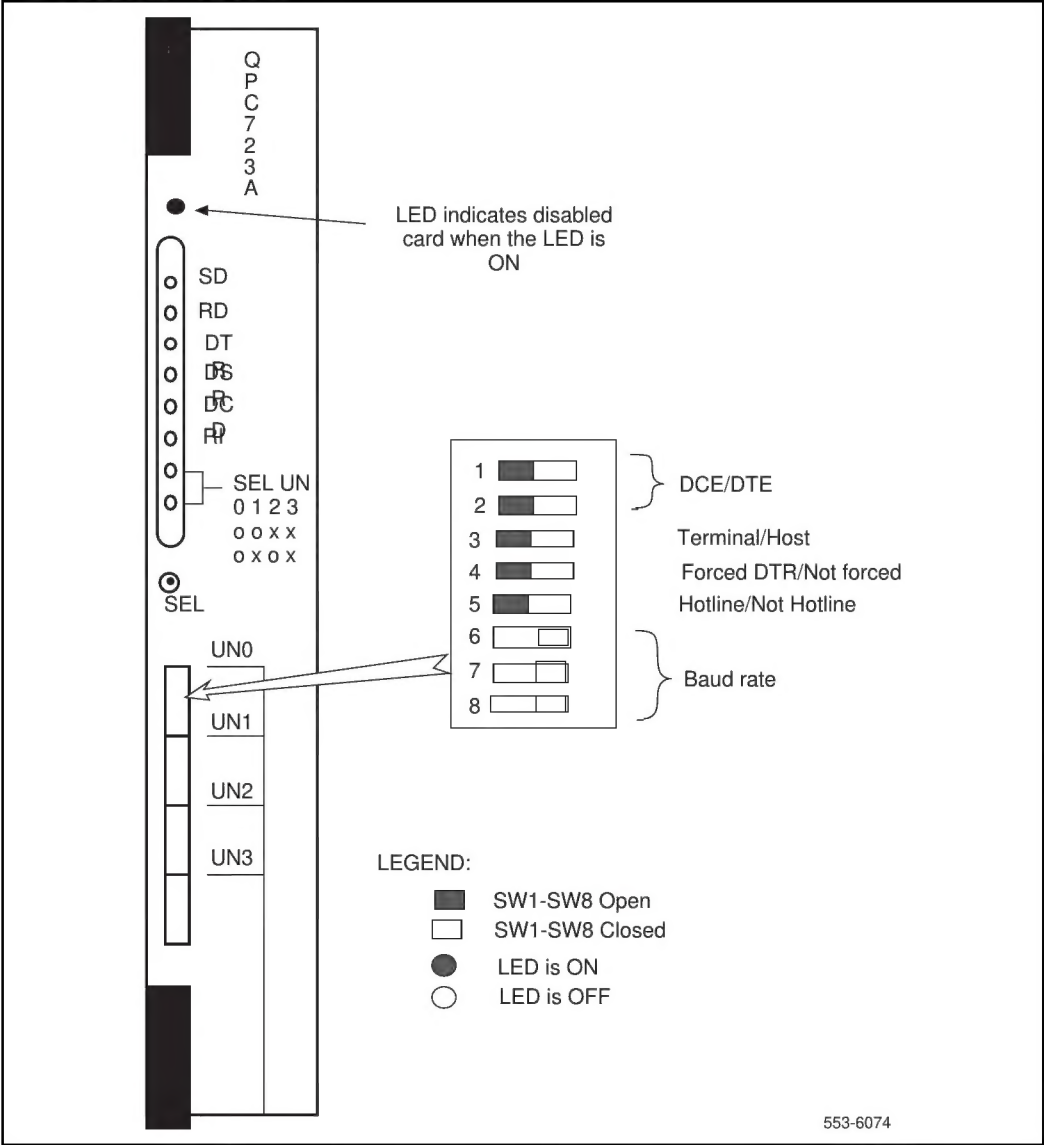
The RILC has one eight-position DIP switch for each of the four ports. The faceplate switches function to control each port characteristic as follows:

Switch 1:	DTE/DCE mode control
Switch 2:	DTE/DCE mode control
Switch 3:	Host/terminal mode control
Switch 4:	Forced DTR/normal
Switch 5:	Hotline/KBD control
Switch 6:	Baud rate control
Switch 7:	Baud rate control
Switch 8:	Baud rate control

A switch-setting change is effective only when a port is idle (not carrying on a data call).

The faceplate also displays charts that define the LED port selection and the switch settings.

Figure 3
RILC faceplate layout



Switch definitions

Switch 1 controls selection of the Data Termination Equipment (DTE) or Data Communication Equipment (DCE) logical and electrical modes of operation. Three Double-Pole-Double-Throw (DPDT) relays direct RS-232 signal directions for DTE or DCE modes of operation as specified in “Signals supported” on page 16

Note: When the DTE mode is selected, the unit is operating as a DTE and is expecting to be connected to a DCE. Data from the unit appears on pin 2 of a correctly connected DB-25 connector. When DCE mode is selected, the unit is operating as a DCE and is expecting to be connected to a DTE. Data from the unit appears on pin 3 of a correctly connected DB-25 connector.

Switch 2 controls the Clear-To-Send (CTS) lead to the backplane. In the DCE mode, the CTS lead is passed through the switch and driven high (ON). In the DTE mode, switch 2 cuts off the signal to the backplane and the RILC assumes that the signal is high. **Switch 2 must always be set in the same position as switch 1.**

Note: If switch 1 is in the DTE mode and switch 2 is left in the DCE mode, the CTS lead (usually pin 5 of the DB-25 connector) will be driven high or low. CTS status under these conditions is undefined and may cause a “bucking” driver condition in the external DCE that could cause a failure of other driver leads in the external DCE (for example, DSR, DCD, RD, and RI may not operate properly).

Switch 3 controls the prompts and messages to execute keyboard dialing (KBD). When the interface is connected to a host computer, or a host-like device, the KBD prompts and messages can cause a ping-pong effect where both interfacing devices declare INVALID COMMANDS to each other. However, these prompts and commands are necessary for a terminal user to execute KBD.

When set to the “Host” position, the switch suppresses these prompts and messages. However, the host may proceed with blind dialing in some configurations.

When set to the “Terminal” position, the RILC provides KBD prompts.

Switch 4 controls the characteristics of DTR (typically pin 20 of the DB-25 connector, driven by DTE, received by DCE), and depends on the selection of switches 1 and 5 for variances in operation.

In the DCE mode, DTR is always viewed as ON even when the electrical DTR signal from the external DTE is OFF.

In the DTE mode, DTR is driven to an electrical ON condition except when a call is being connected. At disconnect, DTR is dropped (electrical OFF condition) for approximately 400 ms, then returned to the ON condition. This permits the external DCE to recognize remote disconnects.

Switch 5 provides for optional hotline control. This allows five methods for a call to be originated to a single predefined number without manually dialing the number. The following options depend upon other switch settings:

— When in DCE mode

- Originate the hotline call when DTR is toggled from OFF to ON.
- Originate the hotline call when DTR is not forced ON and a Carriage Return character is received.
- Originate the hotline call continuously as long as DTR is ON.

— When in DTE mode

- Originate the hotline call when RI is ON.
- Originate the hotline call when DCD is ON.

Switches 6, 7, and 8 determine the baud rate of a port. The switch settings and the corresponding speeds are shown on a chart attached to the faceplate. When the switches are set to auto, the port looks for a Carriage Return <CR> to determine the baud rate. When set to a fixed baud rate, the port works at that baud rate when originating a call, but always conforms to the baud rate set by the originating data module when receiving a call.